

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 2003P03398WO | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/EP2004/002223 | International filing date (<i>day/month/year</i>) 04.03.2004 | Priority date (<i>day/month/year</i>) 26.03.2003 |
| International Patent Classification (IPC) or national classification and IPC | | |
| Applicant SIEMENS AKTIENGESELLSCHAFT | | |

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| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. |
| 2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. |
| 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). |
| 4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application |

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|---|-----------------------------------|
| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/002223

Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-6 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* 1-7 _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/3-3/3 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/002223

| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | |
|---|---|-----|-----|
| 1. Statement | | | |
| Novelty (N) | Claims | 1-7 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1-7 | NO |
| Industrial applicability (IA) | Claims | 1-7 | YES |
| | Claims | | NO |
| 2. Citations and explanations (Rule 70.7) | | | |
| 1. Reference is made to the following document: | | | |
| D1: US 2002/141872 A1 (LEE CHING-PANG ET AL) 3 October 2002 | | | |
| 2. The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1-7 does not involve an inventive step (PCT Article 33(3)). | | | |
| 2.1 Document D1 is considered the prior art closest to the subject matter of claim 1 and discloses (the references between parentheses refer to that document): | | | |
| a coolable layer system (see figures 2-3), consisting of at least a substrate (4) and at least a coating (2, 8) on the substrate (4), cooling channels (10) being used for cooling, the cooling channels (10) at least partly bordering the coating (2, 8) (see figure 3), and at least two cooling channels (see paragraph 0032, lines 12-14) intersecting so that the surface to be | | | |

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

cooled is covered by the cooling channels (10).

The subject matter of claim 1 thus differs from the known coolable layer system in that the cooling channels are arranged in groups so that they intersect one another.

The present invention can therefore be considered to address the problem of improving cooling of a layer system.

The solution proposed in claim 1 of the present application cannot be considered inventive (PCT Article 33(3)) for the following reasons:

The arrangement whereby the cooling channels are arranged in groups so that they intersect one another is only one of several obvious possibilities from which a person skilled in the art would choose according to the circumstances in order to solve the problem of interest, without thereby being inventive. Furthermore, there is an indication in D1 which would suggest to a person skilled in the art modification of the arrangement as per document D1 in line with the present invention (see paragraph 0032, lines 12-14). A person skilled in the art would therefore regard the inclusion of this structural measure in the layer system described in D1 as an obvious approach within the scope of normal technical practice.

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| 2.2 | <p>Dependent claims 2-7 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for inventive step. The reasons are as follows:</p> |
| | <p>The additional features of claims 2-7 concern structural arrangements, the inclusion of which in the layer system described in document D1 would be an obvious approach to a person skilled in the art within the scope of normal technical practice.</p> |
| 3. | <p>Contrary to PCT Rule 5.1(a)(ii), the description does not cite documents D1 and D2 or indicate the relevant prior art disclosed therein.</p> |